

REMARKS

Reconsideration and allowance of the subject application are respectively requested.

Claims 1-29 are all of the claims pending in the application. By this Amendment, Applicants has amended claims 2-4, 8-24, and 28. In response to the Office Action, Applicants respectfully submit that the claims define patentable subject matter.

I. Formal Matters

Applicants thank the Examiner for accepting the drawings filed on February 25, 2005.

Acknowledgement of claim for foreign priority

Applicants also thank the Examiner for acknowledging Applicants' claim to foreign priority. However, Applicants respectfully request that the Examiner to check the 12(a)(3) box because copies of the certified copies were provided by the International Bureau.

II. Information disclosure statements allegedly fail to comply with 37 C.F.R. § 1.98(a)(3)

The Examiner asserts that the information disclosure statements filed on February 25, 2005; June 8, 2006; and August 2, 2006 fail to comply with 37 C.F.R. § 1.98(a)(3) because they do not include a concise explanation of the relevance. Applicants respectfully disagree with the Examiner's position.

Specifically, Applicants have complied with 37 C.F.R. § 1.98(a)(3) because Applicants have supplied English-language versions of the search reports and foreign patent office actions

as permitted by M.P.E.P. 609.04(a).¹ Furthermore, Applicants have confirmed in Private PAIR that the PTO has received the English-language versions of the search reports and foreign patent office actions. Also, JP 2002-56856 is described in the Specification, which is also permitted by M.P.E.P. 609.04(a).² Therefore, Applicants request that the information supplied in the information disclosure statements filed on February 25, 2005; June 8, 2006; and August 2, 2006 be considered. Additionally, Applicants respectfully request the Examiner to consider the information supplied in the information disclosure statements filed on September 14, 2006 because Applicants have also confirmed that Applicants supplied an English-language version of the Chinese Office Action.

III. Objections to the Specification

The Specification is objected to because of the following informalities: On pages 8-11 of the Specification, it states a “potable information device”. It is suggested that the statement should read “portable information device”. By this Amendment, Applicants have amended the

¹ See M.P.E.P. 609.04(a) (“Where the information listed is not in the English language, but was cited in a search report or other action by a foreign patent office in a counterpart foreign application, the requirement for a concise explanation of relevance can be satisfied by submitting an English-language version of the search report or action which indicates the degree of relevance found by the foreign office. This may be an explanation of which portion of the reference is particularly relevant, to which claims it applies, or merely an “X”, “Y”, or “A” indication on a search report.”).

² Specification, page 5, line 25 to page 6, line 5. See also M.P.E.P. 609.04(a) (“The concise explanation may be either separate from the specification or part of the specification.”).

Specification in accordance with the Examiner's suggestion. Accordingly, the Examiner is requested to remove this objection.

IV. Objections to the Claims

Claims 11-24 are objected to because of the following informalities: the word "potable" should be "portable". By this Amendment, Applicants have amended the Specification in accordance with the Examiner's suggestion. Accordingly, the Examiner is requested to remove this objection.

V. Rejection under 35 U.S.C. § 103(a) over JPA 2002-231290 to Hatanaka et al. (hereinafter Hatanaka) in view of JPA 08-287941 to Takahashi (hereinafter Takahashi)

Claims 1, 3, 5, 6, 7, 11, 13-17, and 26-27 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hatanaka in view of Takahashi.

A. Independent claims 1, 11, and 26

By this Amendment, the Applicants have amended claims 1, 11, and 26 to recite "wherein said vibration generating unit is driven by a part of an output of said fuel cell main unit" and "wherein said vibration is generated by using a part of output current of said fuel cell" respectively. Because Hatanaka in view of Takahashi and U.S. Patent No. 5,879,826 to Lehman et al. (hereinafter Lehman) does not teach or suggest this element, Applicants respectfully submit

that claims 1, 11, and 26 are patentably distinct over Hatanaka in view of Takahashi and Lehman.

Specifically, the present invention has the technical feature that the vibration generating unit is driven by a part of an output of the fuel cell main unit. On the other hand, the cited references do not expressly describe the above-mentioned feature. Lehman describes that supporting apparatus includes pumps, compressors or blowers, control systems and other equipment.³ However, the vibration generating unit is not expressly described in Lehman.

Since Hatanaka in view of Takahashi and Lehman does not disclose all of the features of the claims, Applicants respectfully request the Examiner to withdraw the rejections of independent claims 1, 11, and 26 as amended.

B. Dependent claims 3, and 13

By this Amendment, the Applicants have amended claims 3 and 13 to recite “a power applying unit which converts direct current into alternating electric power and outputs said alternating electric power to said vibration generating unit, wherein said vibration generating unit is driven by said alternating electric power.”⁴ Because Hatanaka in view of Takahashi does not

³ Lehman, col. 2, lines 45-57.

⁴ See Specification, page 15, line 27 to page 16, line 2 (describes how the direct current outputted by the fuel cell main unit 100 is converted into alternating current by the inverter device 316).

disclose this element, Applicants respectfully submit that claims 3 and 13 are allowable over Hatanaka in view of Takahashi.

Specifically, Takahashi does not disclose converting direct current into alternating electric power. Also, it is not inherent in Takahashi that direct current be converted in alternating electric power because car batteries are often charged by a device that plugs into alternating current, so the alternating current used by the charging device could be used for the alternating current used to drive the vibrating means 8 of Takahashi.

Since Hatanaka in view of Takahashi does not disclose all of the claim recitations, Applicants respectfully request the Examiner to withdraw the rejections of claims 3 and 13 as amended. Also, Applicants respectfully request the Examiner to allow claims 3 and 13 at least by virtue of their dependency on claims 1 and 11 respectively.

C. Dependent claims 5, 6, 15, and 16

Applicants respectfully request the Examiner to allow claims 5, 6, 15, and 16 at least by virtue of their dependency on claims 1 and 11 respectively.

D. Dependent claims 7 and 17

Applicants traverse the rejections of dependent claims 7 and 17 at least because Hatanaka in view of Takahashi does not teach or suggest all of the recitations of the claim. For example,

Hatanaka in view of Takahashi does not teach or suggest “a holding substrate on which holds said fuel cell main unit and said vibration generating unit” as recited in claims 7 and 17.

The Examiner alleges that the battery casing 1 in Takahashi is the substrate.⁵ However, if the battery casing 1 was similar to anything in claims 7 and 17, it would be similar to the outer part of the fuel cell main unit. One skilled in the art would consider the fuel cell main unit to encompass the outer portion of the fuel cell main unit. Similarly, the battery casing is not a separate substrate but an outer portion of the battery. Also, the Specification has consistently referred to the fuel cell main unit as encompassing an outer portion of the fuel cell.⁶ Therefore, calling the battery casing 1 a substrate is not a reasonable interpretation consistent with the specification, and neither the battery casing 1 or the vibrating means 8 of Takahashi are provided on a holding substrate.

Since Hatanaka in view of Takahashi does not disclose all of the claim recitations, Applicants respectfully request the Examiner to withdraw the rejections of claims 7 and 17. Also, Applicants request the Examiner to allow claims 7 and 17 at least by virtue of their dependency on claims 1 and 11 respectively.

⁵ See Takahashi, Fig. 5 and paragraph [0033].

⁶ Specification, Fig. 1 and page 13, lines 4-17.

E. Dependent claim 27

Applicants respectfully request the Examiner to allow claim 27 at least by virtue of its dependency on claim 26.

VI. Rejection under 35 U.S.C. § 103(a) over Hatanaka in view of Takahashi and U.S. Patent No. 5,879,826 to Lehman et al. (hereinafter Lehman)

Claims 4, 14, and 28 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hatanaka in view of Takahashi and Lehman.

Dependent claims 4, 14, and 28

By this Amendment, claims 4, 14, and 28 have been canceled. Therefore, the above rejections are rendered moot.

VII. Rejection under 35 U.S.C. § 103(a) over Hatanaka in view of Takahashi and U.S. Patent No. 6,117,579 to Gyoten et al. (hereinafter Gyoten)

Claims 2, 8, 9, 12, 19, 18, and 29 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hatanaka in view of Takahashi and Gyoten.

A. Dependent claims 2 and 12

By this Amendment, the Applicants have amended claims 2 and 12 to recite the fuel cell further comprising “a control unit, a first voltmeter connected to a load, a second voltmeter connected to said cell main unit, and an ammeter which measures the current from said fuel cell

main unit to said load”.⁷ Because Hatanaka in view of Takahashi and Gyoten does not disclose this element, Applicants respectfully submits that claims 2 and 12 are allowable over Hatanaka in view of Takahashi and Gyoten.

Specifically, Gyoten does not disclose any structure of a control unit or how it works and only says that the “vibrator produces vibration intermittently or interlocked with the cell performance.”⁸ Because Gyoten does not disclose how the control unit works, it does not disclose the specific configuration claimed in amended claims 2 and 12.

Since Hatanaka in view of Takahashi and Gyoten does not disclose all of the claim recitations, Applicants respectfully request the Examiner to withdraw the rejections of claims 2 and 12 as amended. Also, Applicants respectfully request the Examiner to allow claims 2 and 12 at least by virtue of their dependency on claims 1 and 11 respectively.

B. Dependent claims 8, 9, 18, and 19

By this Amendment, the Applicants have amended claims 8, 9, 18, and 19 to recite “wherein said fuel cell main unit includes a porous fuel electrode side current collector that is coated by hydrophilic(/hydrophobic) coating material.”² Because Hatanaka in view of Takahashi

⁷ See Specification, Figs. 6-7 and page 19, lines 13-25.

⁸ Gyoten, col. 3, lines 38-48.

² See Specification, page 22, lines 11-14.

and Gyoten does not disclose this element, Applicants respectfully submits that claims 8, 9, 18, and 19 are allowable over Hatanaka in view of Takahashi and Gyoten.

Specifically, Gyoten does not disclose that the fuel electrode side current collector is made to have the hydrophilic and hydrophobic regions.¹⁰ Also, Gyoten provides the hydrophilic and hydrophobic regions to facilitate getting water out of the electrodes¹¹ which only occurs in the oxidant electrode side current collector.¹² Therefore, one skilled in the art would not provide the hydrophilic and hydrophobic regions disclosed in Gyoten on the fuel electrode side current collector because there would be no water on the fuel electrode side current collector to facilitate out.

Since Hatanaka in view of Takahashi and Gyoten does not disclose all of the claim recitations, Applicants respectfully request the Examiner to withdraw the rejections of claims 8, 9, 18, and 19 as amended. Also Applicants respectfully request the Examiner to allow claims 8, 9, 18, and 19 at least by virtue of their dependency on claims 1 and 11 respectively.

¹⁰ Gyoten, col. 2, lines 41-48 and col. 2, line 56 to col. 3, line 6.

¹¹ Gyoten, col. 3, lines 1-3.

¹² See Gyoten, col. 1, lines 38-53 (explains how hydrogen is diffused from the fuel electrode side through the polymer electrolyte and then reacts with oxygen on the oxidant electrode side to produce water in the oxidant electrode side).

C. Dependent claim 29

Applicants respectfully request the Examiner to allow claim 29 at least by virtue of its dependency on claim 26.

VIII. Rejection under 35 U.S.C. § 103(a) over Hatanaka in view of Takahashi and U.S. Patent No. 4,125,676 to Maricle et al. (hereinafter Maricle)

Claims 10 and 20 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hatanaka in view of Takahashi and Maricle.

Dependent claims 10 and 20

By this Amendment, the Applicants have amended claims 10 and 20 to recite “said current collector has at least one hole which penetrates said current collector, wherein a diameter of said at least one hole at a side of said fuel electrode catalyst layer is smaller than a diameter of said at least one hole at an opposite side”¹³ to clarify that the hole is continuous and that each hole has different diameters at different ends of the current collector. Because Hatanaka in view of Takahashi and Maricle does not disclose this element, Applicants respectfully submit that claims 10 and 20 are allowable over Hatanaka in view of Takahashi and Maricle.

The Examiner alleges that the smaller pore layer 118 adjacent the catalyst layer and a relatively thick large pore layer 116 on the opposite side in Maricle discloses holes that have a

¹³ See Specification, Fig. 5 and page 23, lines 10-16.

diameter smaller at the fuel electrode catalyst layer side than on the opposite side.¹⁴ However, the layers 116 and 118 are made of an open cell foam which does not have a continuous hole that has one diameter on one side of the current collector and another diameter on another side.¹⁵ Therefore, there are only pores inside the foam, and Maricle does not disclose a continuous hole with differing size diameters on either side of the hole.

Since Hatanaka in view of Takahashi and Maricle does not disclose all of the claim recitations, Applicants respectfully request the Examiner to withdraw the rejections of claims 10 and 20 as amended. Also, Applicants respectfully request the Examiner to allow claims 10 and 20 at least by virtue of their dependency on claims 1 and 11 respectively.

IX. Rejection under 35 U.S.C. § 103(a) over Hatanaka in view of Takahashi, U.S. Patent Application No. 2002/0187380 to Tanaka et al. (hereinafter Tanaka), and U.S. Patent No. 4,883,717 to Kitamura et al. (hereinafter Kitamura)

Claims 21 and 24 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hatanaka in view of Takahashi, Tanaka, and Kitamura.

A. Dependent claim 21

Applicants respectfully traverse the rejection of dependent claim 21 at least because Hatanaka in view of Takahashi, Tanaka, and Kitamura does not teach or suggest all of the

¹⁴ Maricle, col. 6, lines 35-39.

¹⁵ Maricle, col. 6, lines 39-40.

recitations of the claim. For example, Hatanaka in view of Takahashi, Tanaka, and Kitamura does not teach or suggest the element “an outer body, an inner body which is contained in said outer body, ... said fuel cell is held on said inner body” as recited in claim 21. Also, Hatanaka in view of Takahashi, Tanaka, and Kitamura does not teach or suggest the element “a vibration damping material which connects said outer body and said inner body” as recited in claim 21.

The Examiner alleges that the fuel cell stack 52 of Tanaka is the inner body. However, claim 21 requires that the fuel cell be held on the inner body. The fuel cell stack cannot be both an inner body and a fuel cell because something cannot be held on to itself. Therefore, the fuel cell stack 52 is not an inner body and no inner body is disclosed in Tanaka.

Also, the Examiner acknowledges that Tanaka does not disclose that the outer body and the inner body are connected with a vibration damping material. The Examiner thus relies on Kitamura to cure this conceded deficiency. The Examiner alleges that it would have been obvious to supply Kitamura’s butyl based material in Tanaka’s fuel cell mounts between the inner and outer body for the benefit of dampening and isolating vibration of the electrodes of the fuel cell from the rest of the device to minimize positional deviation and deformation. However, there is no motivation to combine Tanaka with Kitamura. Specifically, Tanaka works because its three mounts 82, 86, and 88 define a triangular plane which avoids torsion occurring to a car from effecting the fuel cell stack 52.¹⁶ Tanaka also discloses that it prevents “positional

¹⁶ Tanaka, paragraph [0037].

deviation” of a fuel cell stack caused by vibrations, but Tanaka never discloses that damping vibrations would help prevent “positional deviation” in the device disclosed in Tanaka.¹⁷ Specifically, the three mounts 82, 86, and 88 prevent the fuel cell stack from having positional deviation, and additional means is not necessary nor would be helpful to prevent positional deviation. Also, Tanaka does not disclose any other benefit for damping vibrations. In fact, our application shows that there is actually a benefit for vibrating a fuel cell.

Also, Kitamura discloses providing damping-material between two plates and the benefit of a high vibration-absorbing ability.¹⁸ However, Kitamura does not disclose that there is a benefit for providing a high vibration-absorbing ability between an outer body and an inner body that holds a fuel cell. Therefore, because neither Kitamura or Tanaka disclose a benefit for providing damping between an outer body and an inner body that holds a fuel cell, there is no motivation, and one skilled in the art would not have believed that it would have been obvious, to combine Tanaka with Kitamura.

For the above reasons, Applicants respectfully request the Examiner to withdraw the rejection of claim 21. Also, Applicants respectfully request the Examiner to allow claim 21 at least by virtue of its dependency on claim 11.

¹⁷ Tanaka, paragraph [0059].

¹⁸ Kitamura, col. 2, lines 17-23.

B. Dependent claim 24

Applicants respectfully request the Examiner to allow claim 24 at least by virtue of its dependency on claim 21.

X. Rejection under 35 U.S.C. § 103(a) over Hatanaka in view of Takahashi, Tanaka, Kitamura, and U.S. Patent No. 5,642,413 to Little (hereinafter Little)

Claim 22 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hatanaka in view of Takahashi, Tanaka, Kitamura, and Little.

Dependent claim 22

Applicants respectfully traverse the rejection of dependent claim 22 at least because Hatanaka in view of Takahashi, Tanaka, Kitamura, and Little does not teach or suggest all of the recitations of the claim. For example, Hatanaka in view of Takahashi, Tanaka, Kitamura, and Little does not teach or suggest the element “an information notifying unit which is arranged on said inner body” as recited in claim 22.

The Examiner alleges that the vibration housing 28 is an inner body. However, vibration housing 28 does not meet all of the recitations of claim 21 from which claim 22 depends. Namely, vibration housing 28 is not connected to the exterior housing of the telephone 14 by a vibration damping material. Additionally, combining Little with Hatanaka in view of Takahashi, Tanaka, and Kitamura would not have been obvious because the combination would not work. The vibration damping material claimed in claim 21 would absorb the vibrations that are transmitted through the inner body and not allow the user to be notified. Therefore, a different

apparatus must be used to overcome the vibration damping material, and just providing vibration means 16 will not work.

For the above reasons, , Applicants respectfully request the Examiner to withdraw the rejection of claim 22. Also, Applicants respectfully request the Examiner to allow claim 22 at least by virtue of its dependency on claim 21.

XI. Rejection under 35 U.S.C. § 103(a) over Hatanaka in view of Takahashi and Little
Claims 23 and 25 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hatanaka in view of Takahashi and Little.

A. Dependent claim 23

Applicants respectfully request the Examiner to allow claim 23 at least by virtue of its dependency on claim 11.

B. Independent claim 25

By this Amendment, the Applicants have amended claim 25 to recite “wherein said vibration generating unit is driven by a part of an output of said fuel cell main unit”. As shown in the discussion for claims 1, 11, and 26, Hatanaka in view of Takahashi and Lehman does not teach or suggest this element. Furthermore, Little does not teach or suggest this element. Therefore, since none of the above references disclose all of the features of the claim, Applicants respectfully request the Examiner to withdraw the rejections of independent claim 25.

AMENDMENT UNDER 37 C.F.R. § 1.111
Application no.: 10/525,651

Attorney Docket No.: Q86488

XII. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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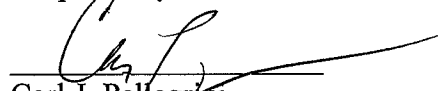
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Respectfully submitted,



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